Avid Configuration Guidelines
HP Z400 Single 6-Core / Quad-Core CPU Workstation
Gen2 Z400 – (6 DIMM / Embedded 1394a Firewire version)
Media Composer / NewsCutter

1.) HP Z400 AVID Qualified System Specification:

Z400 / AVID Qualified Operating System choices:

- Microsoft® Windows Vista Business 64-bit Edition (SP1 / SP2)
- Microsoft® Windows Vista Ultimate 64-bit Edition (SP1 / SP2)
- Microsoft® Windows XP Professional 32-bit Edition (SP2 / SP3)
- Microsoft® Windows 7 Professional 64-bit Edition **(Requires minimum Media Composer 5.0 or NewsCutter 9.0).**

Z400 Hardware Configuration

Qualified CPU Choices

1.) Single Intel® 6-Core Xeon® W3680 Processor @ 3.33GHz 12MB cache / 1333MHz memory*

2.) Single Intel® Quad-Core Xeon® W3550 Processor @ 3.06GHz 8MB cache / 1066MHz memory

3.) Single Intel® Quad-Core Xeon® W3540 Processor @ 2.93GHz 8MB cache / 1066MHz memory^^

^^*This processor selection has gone End-of-Life and is no longer available in new systems being purchased from H.P.*

***CPU Codec performance constraints**

The 3.33GHz W3680 6-core CPU is a mandatory Z400 requirement for support of the XDCAM HD 50 codec operation / capabilities released in Media Composer 5.0 / NewsCutter 9.0

*Video Card Choices***

1.) NVIDIA Quadro 2000 1GB PCI-e video board

2.) NVIDIA Quadro FX 3800 1GB PCI-E video board

** ***See chart D on page 14 of this guide for specific driver rev and application support requirements for each video card listed.***

System Hard Drive

- 320GB SATA-II 3Gb/s 7200RPM Hard Disk Drive (Minimum Recommendation)

Memory Configurations

- Memory: (3 supported configurations)

  a.) Memory: 6GB (3 x 2GB) DDR3 1333 ECC memory –
  (Requires three 2GB DIMMs, DIMM sizes cannot be mixed sizes)

  2GB memory modules must be installed in the following memory slots:
  CPU0-DIMM1, CPU0-DIMM3, CPU0-DIMM5

  b.) Memory: 12GB (6 x 2GB) DDR3 1333 ECC memory –
  (Requires six 2GB DIMMs, DIMM sizes cannot be mixed sizes)

  2GB memory modules must be installed in the following memory slots:
  CPU0-DIMM1, CPU0-DIMM2, CPU0-DIMM3, CPU0-DIMM4, CPU0-DIMM5, CPU0-DIMM6

  c.) *** Memory: 6GB (6 x1GB) DDR3 1333 ECC memory –
  (Requires six 1GB DIMMs, DIMM sizes cannot be mixed sizes)

  1GB memory modules must be installed in the following memory slots:
  CPU0-DIMM1, CPU0-DIMM2, CPU0-DIMM3, CPU0-DIMM4, CPU0-DIMM5, CPU0-DIMM6

  *** This Config has the disadvantage that it cannot be expanded, the existing 1GB modules would all need to be removed and replaced with 2GB modules

Memory configuration constraints
No other memory configurations are recommended in Gen2 Z400 AVID environments. Only the 3 described configurations are supported. Memory configurations which mix and match memory module sizes and locations will result in a poor performing, non-optimal Avid editing operating environment.

2.) Qualified Operating Systems for Avid Client Editing Applications, Hardware and Shared-Storage connectivity with the HP Z400:

1. **Supported: Microsoft® Windows Vista Business 64-bit Edition (SP1 / SP2)**
2. **Supported: Microsoft® Windows Vista Ultimate 64-bit Edition (SP1 / SP2)**
3. **Supported: Microsoft® Windows XP Professional 32-bit Edition (SP2 / SP3)**
4. **Supported: Microsoft® Windows 7 Professional 64-bit Edition**

5. **Not Supported - Microsoft® Windows XP 64-bit (any version)**
6. **Not Supported - Microsoft® Windows Vista 32-bit (any version)**
7. **Not Supported - Microsoft® Windows 7 – any 32-bit version, or any version of Home, Ultimate or Enterprise editions.**

Note regarding Service packs:

Latest Service Pack releases are recommended for all Avid qualified software releases for the Z400. Latest Vista and XP Service Pack releases ***are mandatory for Media Composer 5.0, Symphony 5.0 and NewsCutter 9.0 and later releases***

- SP2 for Vista O.S.
- SP3 for XP O.S.
- SP1 for Win7 64-bit (formally supported starting with M/C 5.5.2, Symphony 5.5.2, NewsCutter 9.5.2 releases)

3.) Qualified Avid Editing Applications and Hardware Supported on the HP Z400 workstation:

AVID qualified Hardware / Shared Storage

	Qualified / Supported by Operating System			Minimum AVID Version S/W M/C = Media Composer N/C=NewsCutter		
	Win7 Pro 64-bit	**Vista 64-bit**	**WinXP 32-bit**	**Win 7 Pro 64-bit**	**Vista 64-bit**	**WinXP 32-bit**
Mojo DX	Yes	Yes	Yes	M/C v5.0 N/C v9.0	M/C v3.5.4 N/C v7.5.4	M/C v3.5.9 N/C v7.5.9
Nitris DX	Yes	Yes	Yes	M/C v5.0 N/C v9.0	M/C v3.5.4 N/C v7.5.4	M/C v3.5.9 N/C v7.5.9
1394 Mojo-SDI DNA	Yes	Yes	Yes**	M/C v5.0 N/C v9.0	M/C v3.5.4 N/C v7.5.4	M/C v3.5.9 ** N/C 7.5.9 **
1394 Adrenaline DNA	Yes	Yes	Yes**	M/C v5.0 N/C v9.0	M/C v3.5.4 N/C v7.5.4	M/C v3.5.9 ** N/C 7.5.9 **
Matrox MX02 Mini	Yes	Yes	Yes	***Requires minimum M/C 5.0 / NewsCutter 9.0***		
AJA IO Express	Yes	**No**	**No**	***O.S. support - Windows 7 Pro 64-bit only. Compatible only with Media Composer or NewsCutter Requires minimum M/C 5.5.1 / NewsCutter 9.5.1***		
1394 Mojo-Analog DNA	**No**	**No**	**No**	N/A		
Symphony-Nitris DNA (Classic)	**No**	**No**	**No**	N/A		
Unity ISIS System Infrastructure	Yes	Yes	Yes	ISIS 1.4 **Infrastructure**		
Unity ISIS 1 Gbit Ethernet Client	Yes	Yes	Yes	ISIS 2.03 **Client**		
Unity ISIS Hi-res (10 Gbit) client	Yes	Yes	Yes	ISIS 2.03 **Client**		
Unity MediaNet Infrastructure	Yes	Yes	Yes	MediaNet 4.2.4 **Infrastructure**		
Unity MediaNet Fibre	Yes	Yes	Yes	MediaNet 5.1.2 **Client**		
Unity MediaNet AECIFs	Yes	Yes	Yes	MediaNet 5.1.2 **Client**		

** ***WIN XP 32-bit Support Note:*** *For operation with WinXP 32-bit OS and 1394 Adrenaline or 1394 Mojo-SDI hardware, installation of Service Pack 3 (SP3) and the following 1394b Microsoft Hot-Fix (955408) is required. Both the Hot-Fix and SP3 are mandatory requirements to ensure proper operation of the supported 1394b PCI-E HBA with AVID 1394 DNA hardware. Restart the system after running the hot-fix.*

The 955408 hot-fix can be down-loaded from Microsoft's website at:
http://support.microsoft.com/hotfix/KBHotfix.aspx?kbnum=955408&kbln=en-us

NOTE: *The hot-fix must be installed with the 1394b adapter physically installed in slot #1. Installation of the hot-fix without the 1394 adapter installed in slot #1 will result in improper operation of 1394 Adrenaline and 1394 Mojo-SDI. If the hot-fix was initially run without the 1394b adapter installed, it is okay to run the hot-fix again. Running the hot-fix multiple times will not result in any system issue.*

Please Note: The hot-fix page indicates that this fix is for SP4.
This hot-fix is actually for SP3. It is safe to use this fix for SP3.

The 955408 1394 Hot-Fix does not apply to Vista 64-bit O.S. Environments.

AVID qualified HBA info

AVID qualified HBA	AVID Part Number	Slot	Function
Avid HIB, DX Interface HBA**	Active: 7030-30048-01 Active: 7030-20084-01 Passive: 7030-30021-01	#1	Avid DX Hardware Interface HBA
Matrox MX02 Mini PCI-E Interface HBA	Not stocked by AVID	#1	Matrox MX02 Mini interface (Part of Matrox MX02 Mini kit)
AJA IO Express PCI-E Interface HBA	Not stocked by AVID	#1	AJA IO Express interface (Part of AJA IO Express kit)
Atto FC-41ES***	7030-20004-01	#3	Shared Storage: MediaNet LAN-Share Fibre
Intel PRO 1000 PT - ISIS	7030-20139-01	#3	Shared Storage: Unity ISIS Copper Gb-Ethernet
Intel PRO 1000 PF - ISIS	Not stocked by AVID	#3	Shared Storage: Unity ISIS Optical Gb-Ethernet
Chelsio S310E-SR^^	7030-20171-01	#3	Shared Storage: Unity ISIS 10Gb-Ethernet
Myricom 10G-PCIE-8B-S***	7030-30041-01	#4	Shared Storage: Unity ISIS 10Gb-Ethernet **Requires minimum ISIS 2.2**
LSI 9200-8e SAS controller	7030-30036-01	#4	SAS Local Storage: Xtore StudioRAID 16Re (16-bay) chassis Xtore StudioRAID 5Te (5-bay) chassis
Atto H680	7030-30028-01	#4	SAS Local Storage – Avid VideoRAID SR (16-bay)
Atto R380	7030-20166-01	#4	SAS Local Storage –Avid VideoRAID ST (5-bay) and Xtore StudioRAID 5Ti (5-bay) chassis
Atto UL5D	7030-20002-01	#4	Local Storage – VideoRAID RTR & Legacy Avid u320 SCSI storage *(The UL5D BIOS should be disabled)*
StarTech PEX1394B3 1394b PCI-E	7030-30029-01	#1	1394 connectivity for: 1394 Adrenaline DNA / 1394 Mojo-SDI DNA
Dynex DX-PCI2PF 1394b PCI-E	Alternate 1394b PCI-E HBA, Not stocked by AVID	#1	1394 connectivity for: 1394 Adrenaline DNA / 1394 Mojo-SDI DNA
Point Grey Research model FWB-PCIE-01, 1394b PCI-E	Alternate 1394b PCI-E HBA, Not stocked by AVID	#1	1394 connectivity for: 1394 Adrenaline DNA / 1394 Mojo-SDI DNA

Specific Important qualified HBA Support Notes

** *DX Interface HBA Support Note: (See reference pictures on page 11 of this guide).*

1) Active DX interface HBA (7030-30048-01 and 7030-20084-01) function with all Z400 DX supported releases of Media Composer and NewsCutter. (Media Composer 3.5.4 and NewsCutter 7.5.4 or later releases).

2) Passive DX interface HBA (7030-30021-01) requires Media Composer 3.5.9 or NewsCutter 7.5.9 or later version software. Running the passive version DX HIB with prior software releases may result in instability.

*** *Atto FC-41ES HBA Support Note:.*

1) The Z400 requires a Rev D or later version FC-41ES. The board revision is clearly marked on a label on the back of the FC-41ES. Earlier revisions (A, B and C) of the FC-41ES may demonstrate compatibility issues when used with the Z400 including not being recognized by the Z400 CPU.

^^ *Chelsio S310E-SR 10Gb Interface HBA Support Note.*

1) Qualified only with Windows XP 32-bit and Vista 64-bit O.S. *Cannot be used with Win7 O.S.*

*** *Myricom 10G-PCIE-8B-S 10Gb Interface HBA Support Notes.*

1) Initial shared storage HBA's used in the Z400 resided in slot #3. However, the Myricom 10G-PCIE-8B-S must reside in slot #4 as this HBA requires the performance of the additional PCI-E lanes offered for slot#4. It will not function properly if used in slot #3. Using the Myricom 10G-PCIE-8B-S for ISIS 2.2.x connectivity will not allow for support of simultaneous connection to local storage in Z400 configurations as the local storage controllers must also reside in slot #4.

2) Qualified with Windows XP 32-bit, Vista 64-bit O.S. and Win7 Pro 64-bit. **Requires minimum ISIS 2.2** *For XP 32-bit client, qualified only with ISIS 7000 (ISIS Classic). Not qualified or recommended with ISIS 5000 and WinXP 32-bit client.*

4.) Slot Configuration:

			DX Hardware configs Or Matrox MX02 Mini configs Or AJA IO Express configs	**1394 Adrenaline DNA Hardware 1394 Mojo-SDI DNA Hardware**
Slot #	Electrical	Mechanical		
1	x4 PCI-E Gen 2 (25Watts)	x8	Avid HIB, DX Interface HBA Active: 7030-30048-01 & 7030-20084-01 (all s/w releases) Passive HIB: 7030-30021-01 *(Requires Media Composer s/w release 3.5.9 or later and NewsCutter 7.5.9 or later)* OR Matrox MX02 Mini PCI-E Interface HBA OR AJA IO Express PCI-E Interface HBA	*1394b PCI-Express HBA required (w 8K buffers).* ***See specific info below in section 5.*** ***AVID 1394 DNA hardware must connect to the PCI-E 1394b HBA***
2	x16 PCI-E Gen 2 (75Watts)	x16	Graphics Card: Quadro 2000 Quadro FX 3800	
3	x4 PCI-E Gen 1 (25Watts)	x8	Shared Storage Controllers: Atto FC-41ES - MediaNet LAN Share Intel PRO 1000 PT - ISIS 5000 / 7000 Intel PRO 1000 PF - ISIS 5000 / 7000 Chelsio S310E-SR - ISIS 10Gb	
4	x16 PCI-E Gen 2 (75Watts)	x16	Local Storage Controllers: Atto H680 – Avid SAS VideoRAID SR (16-bay) support Atto R380 – Avid SAS VideoRAID ST (5-bay) support Atto R380 – SAS Xtore StudioRAID 5Ti (5-bay) support LSI 9200-8e SAS Xtore 16Re (16-bay) support LSI 9200-8e SAS Xtore 5Te (5-bay) support Atto UL5D - Legacy u320 SCSI support OR Shared Storage Controller: Myricom 10G-PCIE-8B-S	
5	PCI 32bit /33MHz	PCI 32/33	**Do Not Use.** Will cause BUS contention with embedded 1394 controller.	
6	PCI 32bit /33MHz	PCI 32/33	**Do Not Use.** Will cause BUS contention with embedded 1394 controller.	
	Embedded Broadcom BCM5764 GbE NIC	PCI-E x1 Gen 1	*Not qualified for Avid ISIS 5000 / 7000 Connectivity* *Qualified for Avid MediaNetwork AECIFs*	
	Embedded 1394a Controller (4K buffer) Single Front Panel Connector	PCI 32/33	Front Panel 1394 Port - Primary 1394 connection for camera / deck / disk drive etc,. (1394 disk drives are recommended only for file transfers)	

5.) 1394 DNA (Adrenaline / Mojo) hardware configuration requirement (slot #1 requirement)

AVID 1394 DNA (Adrenaline / Mojo) hardware must connect via specific high-performance add-in 1394b PCI-Express Firewire cards (with 8K buffers) which must be installed in Slot #1. *The Z400 front panel 1394 port **cannot be used** for connectivity to AVID 1394 DNA hardware.*

*Current q*ualified PCI-Express 1394b Firewire cards are:

1) StarTech PEX1394B3 (AVID P/N 7030-30029-01)

http://www.startech.com/item/PEX1394B3-2b-1a-PCI-Express-1394-FireWire-Adapter-Card.aspx

2) Dynex DX-PCI2PF

http://www.dynexproducts.com/pc-729-2-dynex-2-port-firewire-800-and-1-port-firewire-400-pcie-adapter.aspx

3) Point Grey Research FWB-PCIE-01

http://www.ptgrey.com/products/firepro/adapters/FWB-PCIE/PCIe_1394b_card_datasheet.pdf

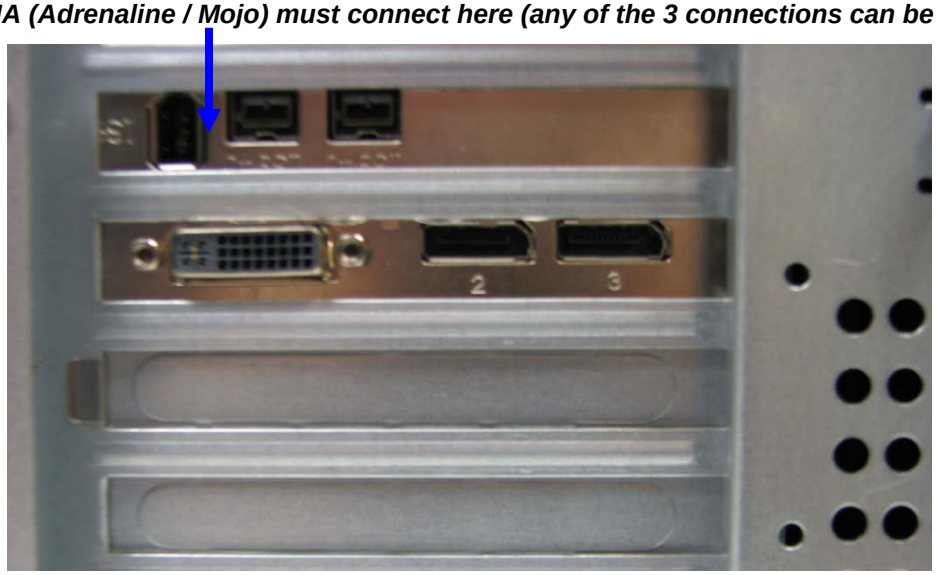
6.) Utilization of 1394 a/b controllers. Embedded 1394a controller and optional PCI-E 1394b HBA (Slot #1).

- Embedded single-port PCI 1394a Firewire controller, ***connects only to Z400 front panel 1394a port.***
- Optional 1394b PCI-Express Firewire card (with 8K buffers) StarTech, Point Grey Research, Dynex etc. (Slot #1)

Configuration	Embedded Single-Port 1394a Controller (4K buffer)) Single Front Panel Connector	1394b PCI-Express Firewire card (with 8K buffers) StarTech, Point Grey Research, Dynex etc. (Slot #1)
	Utilization for 1394 Camera / Deck / Disk Drive support	**Utilization for AVID 1394 DNA (Adrenaline / Mojo) hardware support**
AVID 1394 DNA (Adrenaline / Mojo) Or Matrox MX02 Mini Hardware configs Or AJA IO Express Hardware configs	**Yes** - Supports 1394 Deck / Camera / Disk Drive	**Mandatory.** Avid specified add-in 1394b controller required in slot #1 for AVID 1394 DNA (Adrenaline / Mojo) connectivity.
DX H/W	**Yes** - Supports 1394 Deck / Camera / Disk Drive	**N/A**
S/W Only	**Yes** - Supports 1394 Deck / Camera / Disk Drive	**N/A**

Slot #1 *1394b PCI-Express HBA (w 8K buffers)*

AVID 1394 DNA (Adrenaline / Mojo) must connect here (any of the 3 connections can be used)



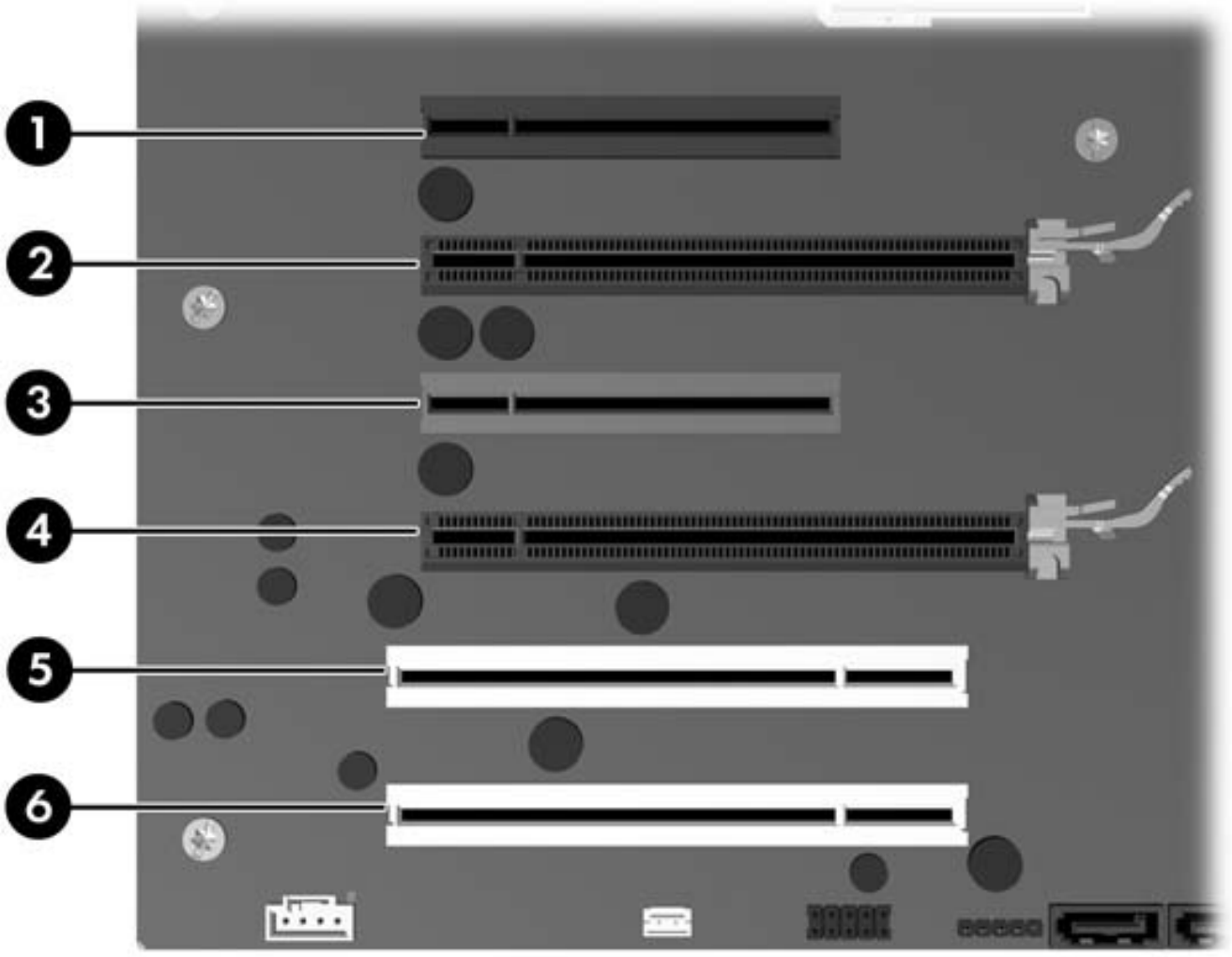
Primary 1394 connection for Deck / Camera / Disk Drive

Primary 1394 connection for Deck / Camera / Disk Drive
Embedded 1394a Controller Front Panel Connection

Embedded 1394a controller of the Gen2 Z400 does not have any 1394 ports on the rear of the chassis.
*(This 1394 connection **cannot be used** for 1394 DNA Adrenaline / 1394 Mojo support)*

7.) HP Z400 I/O Slot Layout

HP Z400 Slot Layout



8.) Various Configuration Issues:

A.) D/X hardware configs –

Active DX interface HBA's (P/N's 7030-30048-01 and 7030-20084-01) pictured below function with all Z400 DX supported releases of Symphony, Media Composer and NewsCutter. (Media Composer / Symphony 3.5.4 and NewsCutter 7.5.4 or later releases).

7030-30048-01

7030-20084-01

Passive DX interface HBA (7030-30021-01) pictured below requires minimum Symphony / Media Composer 3.5 9 or NewsCutter 7.5.9 version software. Running the passive version DX HIB with prior software releases may result in instability.

B.) Qualified Avid system BIOS version(s): (As of this writing):

It is **mandatory** that the BIOS be updated to an "AVID Qualified" BIOS. *Failure to update the Z400 to an "Avid qualified BIOS" will result in non-optimal operation of the AVID software and hardware.*

Quad-Core CPU configurations:

- Minimum BIOS ver 1.06
- Also qualified ver 1.14, ver 1.17, ver 3.07, ver 3.12, ver 3.15, *ver 3.19 (preferred),*

6-Core CPU configurations:

- **Mandatory Minimum BIOS ver 3.12 ,** ver 3.15, *ver 3.19 (preferred),*

Current Avid qualified Z400 BIOS information is maintained at the following Avid KB link:

http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=267609&Hilite=hp+bios

Z400 Required system BIOS settings:

1. Set CPU Processors Hyper-Threading – Enable
2. Set Runtime Power Management – Disable
3. Set MWAIT-Aware OS – Disable
4. Set Idle Power Savings – Normal

Z400 Optional system BIOS change:

1. Set Intel Turbo Boost Technology** – Disable

** Only required if connecting USB audio I/O devices. This setting will eliminate any audio "motor-boating" or audio "popping" which may be experienced with USB audio I/O devices.

See Instructions on how to set Z400 BIOS settings on the next page:

Set Z400 Required system BIOS settings:

- During boot up press F10 at the HP splash screen to invoke Set Up.

- Select the Advanced tab

- Select Processors. <Enter>
- Select Hyper-Threading
- Default setting is Disable
    - Change this setting from Disable to Enable
- Hi F10 to save the Hyper-Threading setting

- Select the Power tab

- Select OS Power Management <return>

- Select Runtime Power Management

- Default setting is Enable
    - Change this setting from Enable to Disable

- Select MWAIT-Aware OS
- Default setting is Enable
    - Change this setting from Enable to Disable

- Select Idle Power Savings
- Default setting is Extended
    - Change this setting from Extended to Normal

- Hi F10 to save the Runtime Power Management, MWAIT-Aware OS, and Idle Power Savings

- Press F10 twice to Save

- Save Changes and Exit
- System will Reboot

Set Z400 Optional system BIOS setting:

- Select the Power tab
- Select Hardware Power Management <Enter>
- Select Intel Turbo Boost Technology
- Default setting is Enable
    - Change this setting from Enable to Disable
- Press F10 twice to Save
- Save Changes and Exit

C.) WinXP 32-bit Configuration Issue:

Windows XP 32-bit memory utility: (AVID Install3GB utility) (Does not apply to systems running Vista 64-bit). Upon completion of the AVID software installation, the AVID / WinXP 32-bit memory utility must be run to properly configure the WinXP 32-bit environment to run AVID software. This utility is named “Install3GB” and resides in the following folder location c:\ Programs \ Avid \ Utilities \ 3GB. Simply double-click on the “Install3GB” utility and enter the proper parameter for your particular AVID configuration. The “Install3GB” utility is user friendly and will walk the user through determination of the proper setting. This utility only needs to be run once and will create the proper permanent WinXP 32-bit operating system setting. Should your AVID hardware / software configuration ever change, simply rerun the utility and reconfigure WinXP 32-bit as needed. *The “Install3GB” utility should never be run for a Vista 64-bit environment (WinXP 32-bit only).*

D.) Nvidia Qualified Drivers:

Nvidia qualified drivers

AVID Software	Version(s)	Nvidia GPU	Nvidia Driver Required
Media Composer / Symphony	5.0.3.8 and later	Quadro 2000**	259.77
NewsCutter	5.0.3.8 and later	Quadro 2000**	259.77
Media Composer / Symphony	5.0.3.7r and later	Quadro FX 3800	190.38 or 259.77 ^^
NewsCutter	9.0.3.7r and later	Quadro FX 3800	190.38 or 259.77 ^^
Media Composer / Symphony	4.0.3 to 5.0.2	Quadro FX 3800	190.38
NewsCutter	8.0.3 to 9.0.2	Quadro FX 3800	190.38
Media Composer / Symphony	3.5.4 to 4.0.2	Quadro FX 3800	182.65
NewsCutter	7.5.4 to 8.0.2	Quadro FX 3800	182.65

After installation of the AVID software the supported Nvidia driver can be found in the following directory:
Program Files / Avid / Utilities / Nvidia

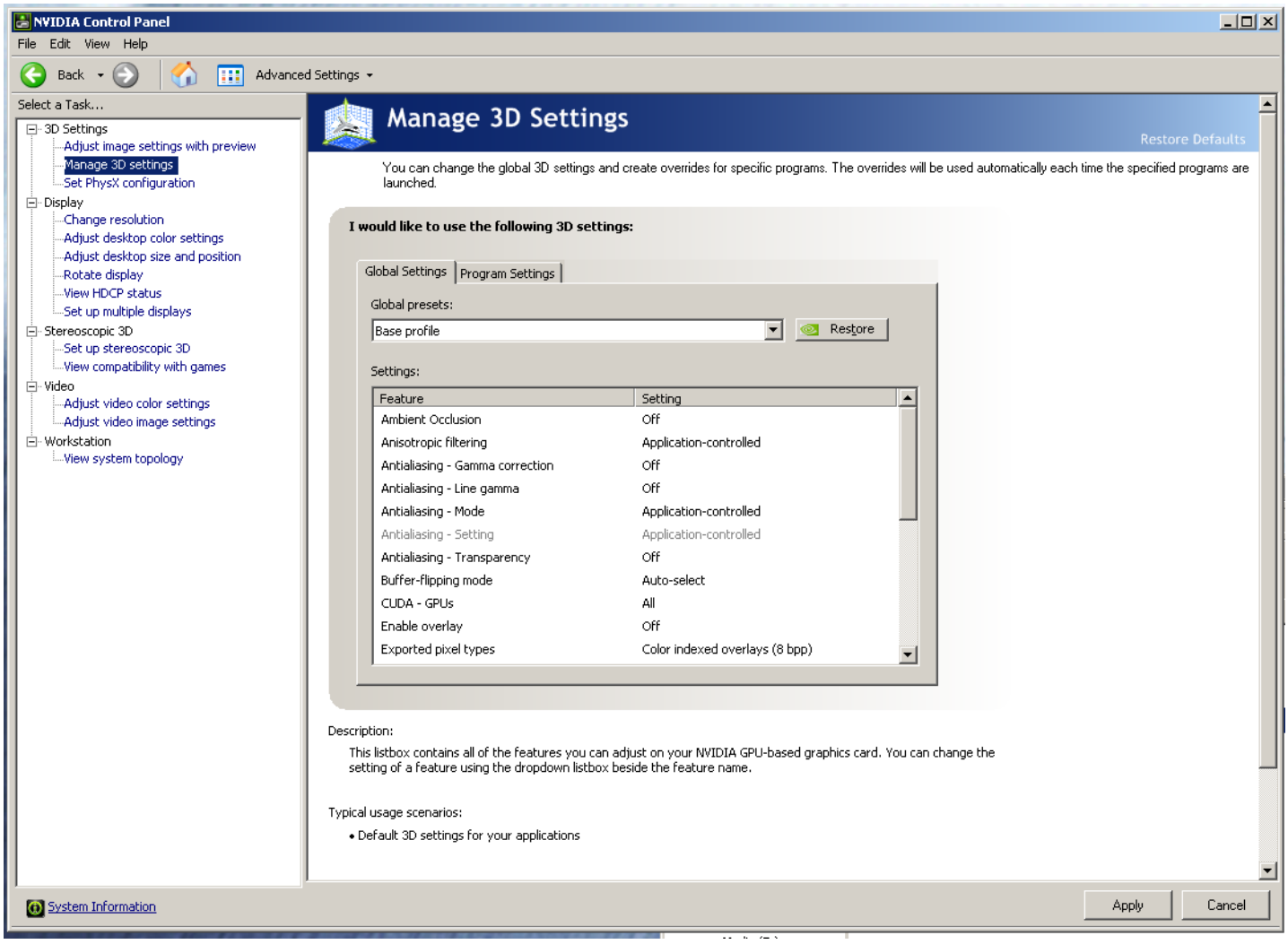
^^ Refer to the ReadMe for the specific version of Symphony, Media Composer or NewsCutter being installed

** The Quadro 2000 requires driver version 259.77. The previously qualified Nvidia driver versions 190.38 and 182.65 released with previous versions of Avid editing applications do not support the new generation Quadro 2000 GPU.

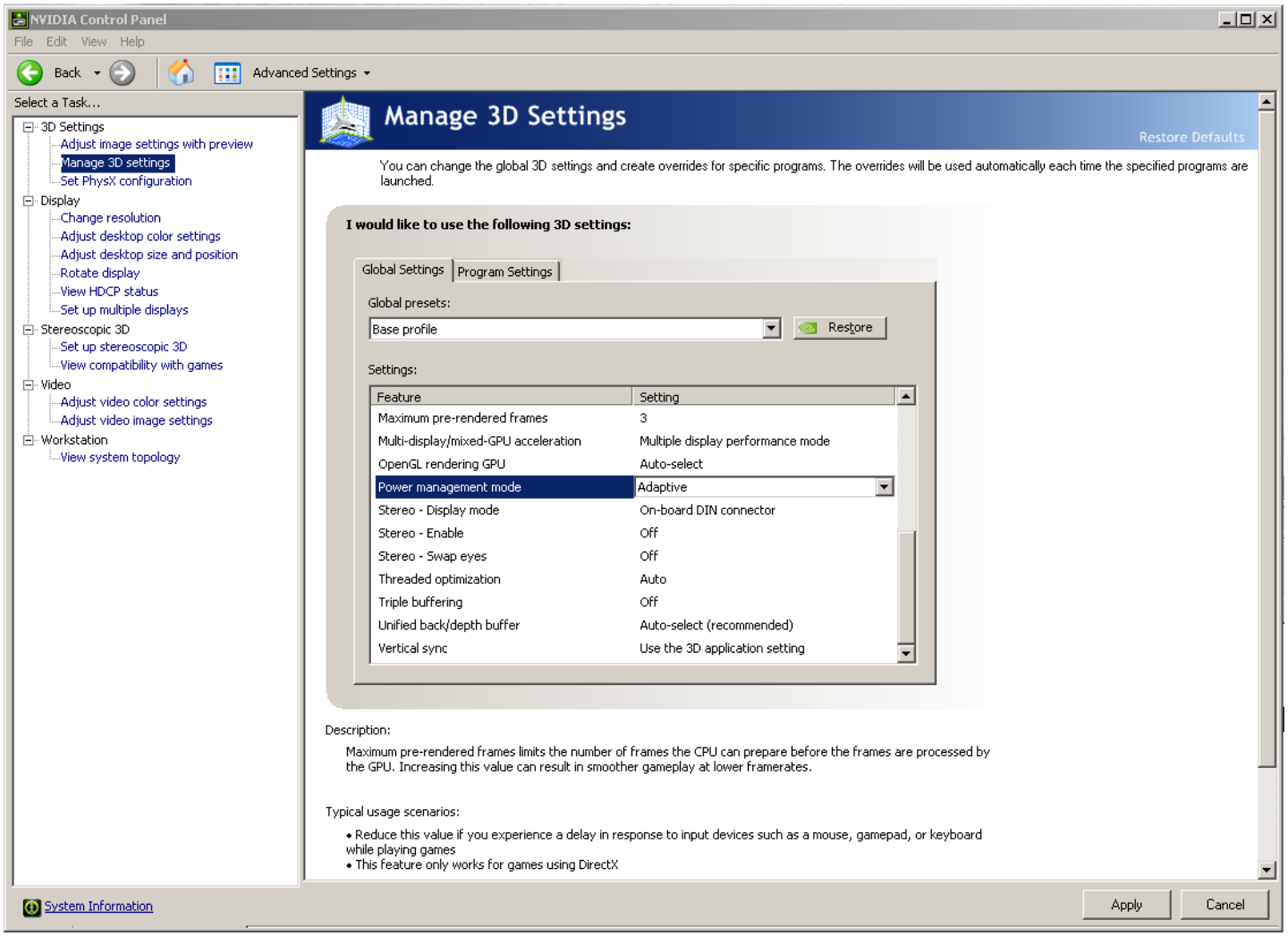
Set optimized Nvidia driver settings for Avid editing environments:

For driver versions 190.38 and 259.77 make the following setting for "Power Management Mode"

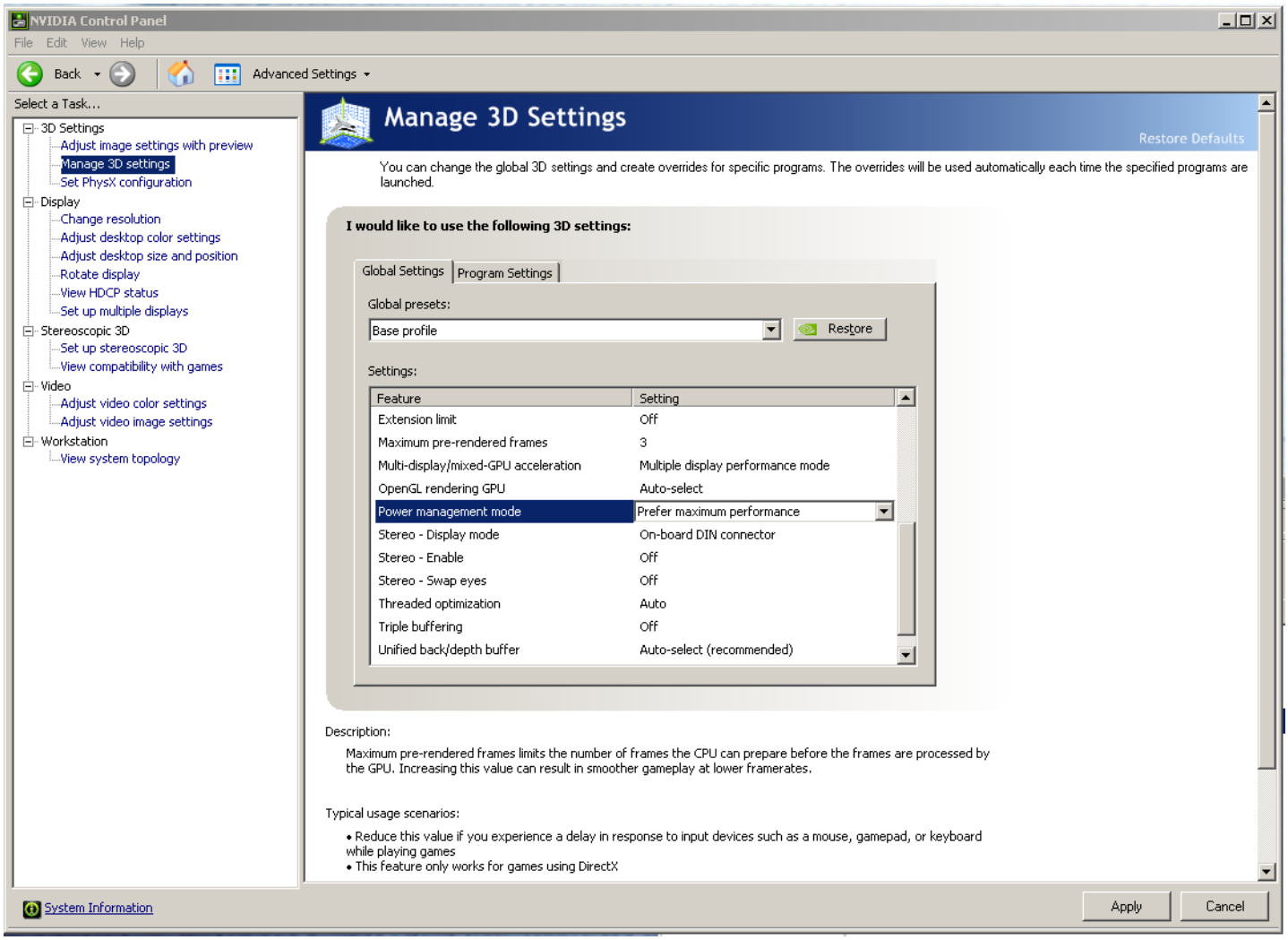
1. Right-Click on the desktop
2. Select Nvidia Control Panel
3. Select Manage 3D Settings
4. Select "Global Settings" Tab
5. Under the "Global Settings" tab select "Base Profile" as shown in the picture below:



6. Scroll down and locate the “Power Management Mode” feature. The default setting is “Adaptive” as shown in the picture below.



7. For the “Power management mode” feature, select “Prefer maximum performance” as shown in the picture below.



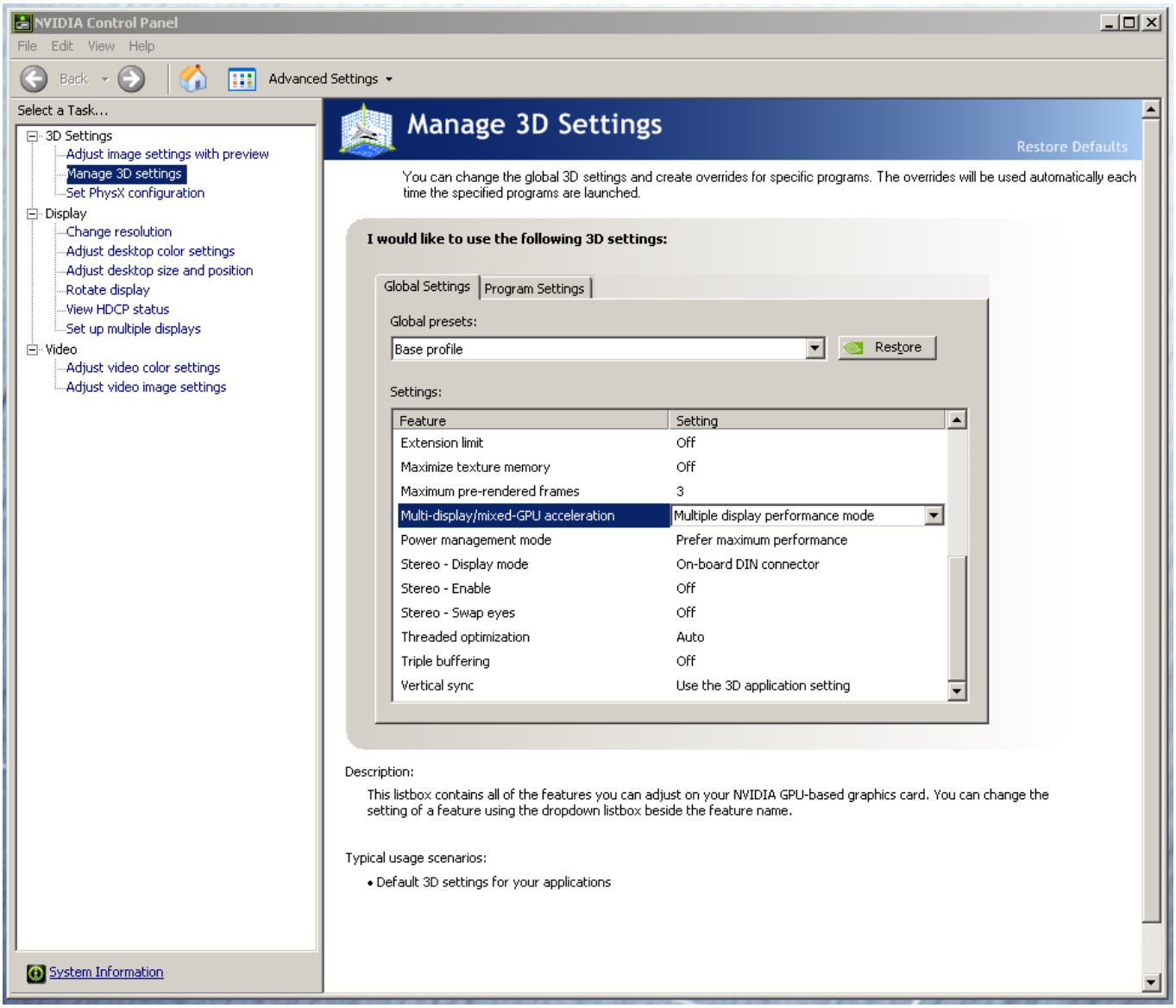
8. Depress the “Apply” button.

For driver versions 190.38 and 259.77 make the following setting for "Multi-display/mixed-GPU acceleration"

1. Stay in the "Manage 3D Settings" and "Base Profile" area

2. Select "Global Settings" Tab

3. Scroll down and locate the "Multi-display/mixed-GPU acceleration" feature. See picture below. The setting should be set to "Multiple display performance mode". If not set properly, select Multiple display performance mode and depress the "Apply" button. (The other settings are "Single display performance mode" and "Compatibility performance mode". These settings are not recommended for Avid editing environments).



If using driver version 190.38 no further settings are required.

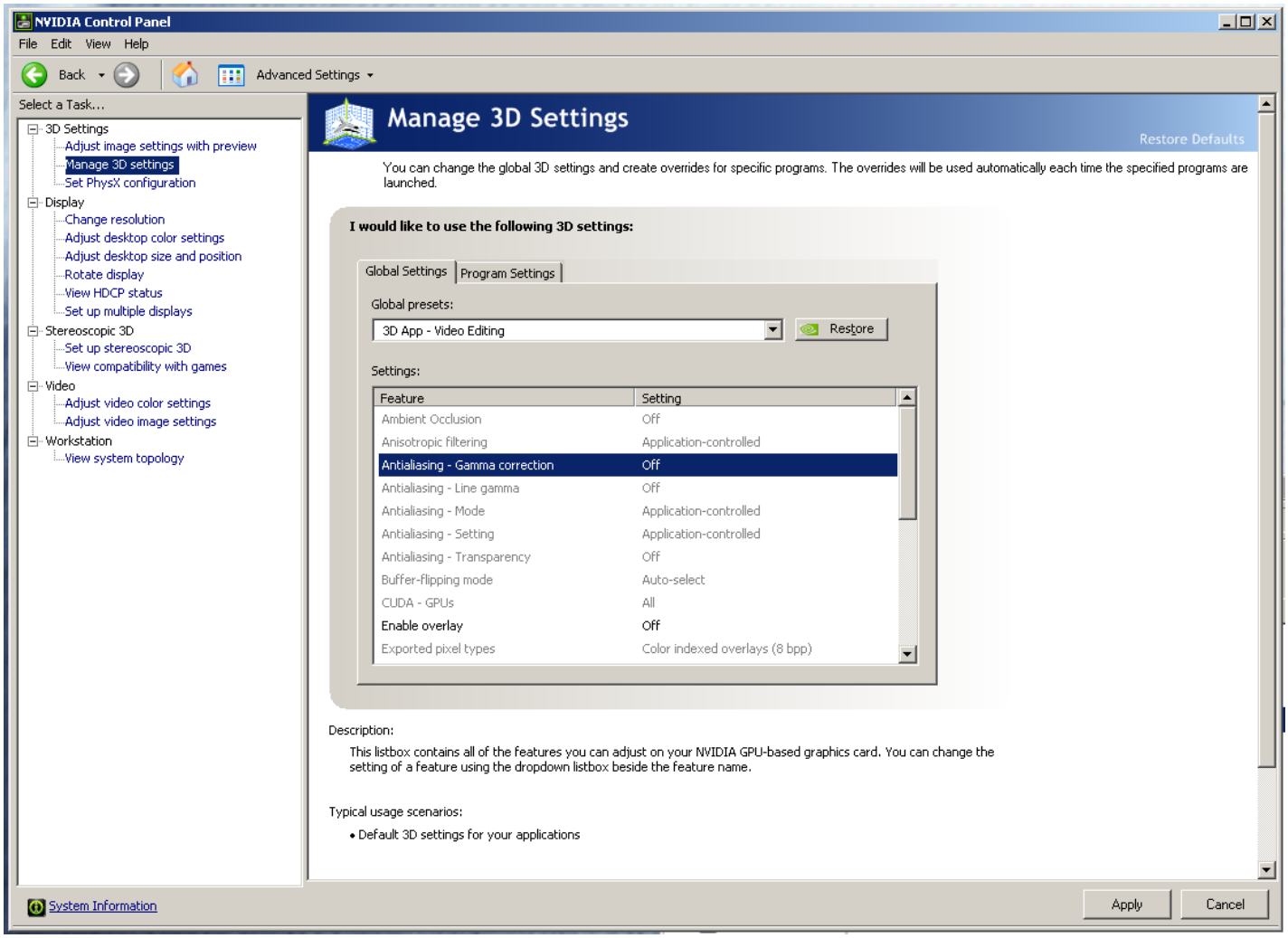
If using driver version 259.77 make the following additional setting for "3D App-Video Editing"

***Please Note:* Do not make the "3D App-Video Editing" setting if you are using Avid FX or Boris Continuum Complete.** *Do not use the "3D App - Video Editing" setting with these applications. There is a known redraw issue. If using the 259.77 driver, but face the mentioned limitation and cannot use the "3D App-Video Editing" setting, the user may experience a black flash on startup in the Source/Record monitors.*

1. Stay in the "Manage 3D Settings" area

2. Select "Global Settings" Tab

3. Under "Global Settings" tab select "3D App-Video Editing" setting as shown in picture below:



4. Depress the "Apply" button
5. Nvidia driver optimization settings for Avid environments are complete.

E.) Nvidia Quadro GPU monitor connectivity:

The Nvidia Quadro 2000 and Quadro FX 3800 graphics card have a single DVI port and two Display-Port ports
*(Important: Display-ports **are not** HDMI ports; at first glance they do look very similar to HDMI ports)*
(Please Note: Only two of the three video ports can simultaneously be used. Connecting to all three video ports at the same time will result in non-functioning video output from the Nvidia GPU video card.)

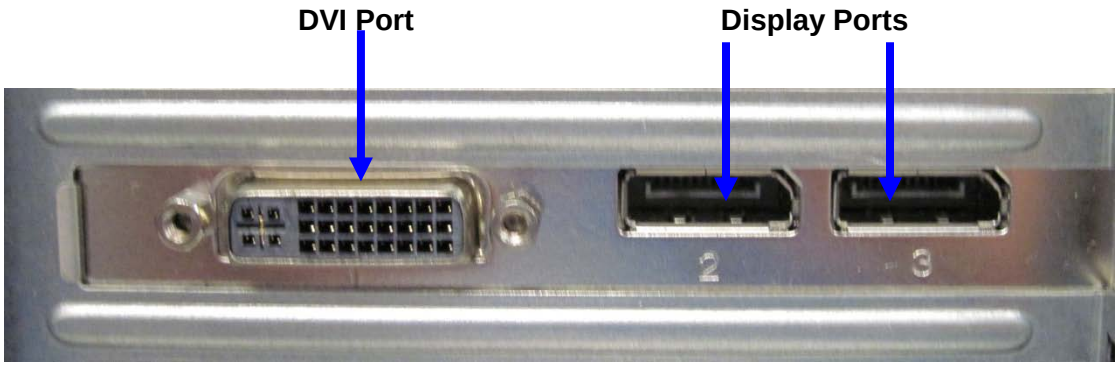
The HP Z400 includes one Display-Port-to-DVI adapter. HP P/N 481409-001

For dual monitor connectivity:

1. Use the DVI port and one Display-Port (Display-Port connection can be native display-port to monitor via display-port connection, or use the display-port-to-DVI-adapter supplied with the system to connect to a native DVI monitor).

2. Or use two Display-Ports (Requires monitors with native display-port connections, two display-port to DVI adapters are not recommended when using dual display-port connections).

Reference picture Quadro FX 3800 (similar to Quadro 2000)



F.) Connecting to Analog VGA monitors and VGA switchers - Single and dual monitor connectivity:

Due to the large number of available types, AVID cannot guarantee functionality with older technology analog VGA monitors / switchers.

Recommendations are:

1. Use a passive DVI-to-VGA adapter on the FX 3800 DVI port for the primary VGA connection

2. For a 2nd analog VGA connection, several manufacturer's offer active "Display-Port-to-VGA" adapters. Performance with these adapters may vary based on your particular model VGA monitors and switches. (Making two VGA connections via two display-port-to-VGA adapters is not recommended).

3. "Display-Port-to-VGA" adapters are available from the following 3rd party manufacturer's:

   http://h10010.www1.hp.com/wwpc/us/en/sm/WF06c/A10-51210-64265-3965876-64265-3895841-3895842-3895844.html

   http://accessories.us.dell.com/sna/products/Cables/productdetail.aspx?c=us&l=en&cs=19&sku=330-4685

   http://www.siig.com/ViewProduct.aspx?pn=CB-DP0082-S1

G.) Serial Port Deck Control:

The HP Z400 workstation does not have an embedded serial port. Serial port deck control can be established via two methods (both of which have been qualified by Avid and will maintain frame accuracy in Avid environments)

1. Addenda model **RS-USB / 4** direct USB-to-RS422 serial adapter. This is a simple device which connects directly from a USB port of the Z400 directly to the RS422 port of a deck.
   http://www.addenda.com/addenda-elect/products/rsUSB4.php

2. Combination of a Keyspan (Tripp-Lite) Model USA-19HS USB-to-serial-port adapter with Addenda Rosetta Stone model RS – 2/8 RS232-to-RS422 converter

   - Keyspan (Tripp-Lite) Model USA-19HS (AVID P/N 7080-20013-01)
     http://www.tripplite.com/en/products/model.cfm?txtSeriesID=518&EID=13384&txtModelID=3914
   - Addenda Rosetta Stone (or equivalent) model RS – 2/8 RS232-to-RS422 converter (AVID P/N 7070-00507-01)
     http://www.addenda.com/addenda-elect/products/rs28.php

To connect the Keyspan 19HS / Addenda RS -2/8 combination:

- Install the Keyspan 19HS driver before plugging the device into a Z400 USB port.
- Once the Keyspan 19HS driver is installed then plug the Keyspan 19HS into a Z400 USB port.
- The Keyspan 19HS will now show up in device driver.
- Using a serial cable, connect the 9-pin serial port of the Keyspan 19HS USB adapter to the port of the Addenda marked RS232 from PC
- Using a 2nd serial port cable connect the port of the Addenda marked “RS422 to VTR” to the deck control serial port of the deck.

H.) O.S. setting recommendations for optimum performance with Avid Editing applications:

The following links provide O.S. setting suggestions for ensuring optimum performance when working with your Avid editing application with a Windows operating system.

- Optimizations for Video Editors - Windows Vista or Win 7

  http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=390339

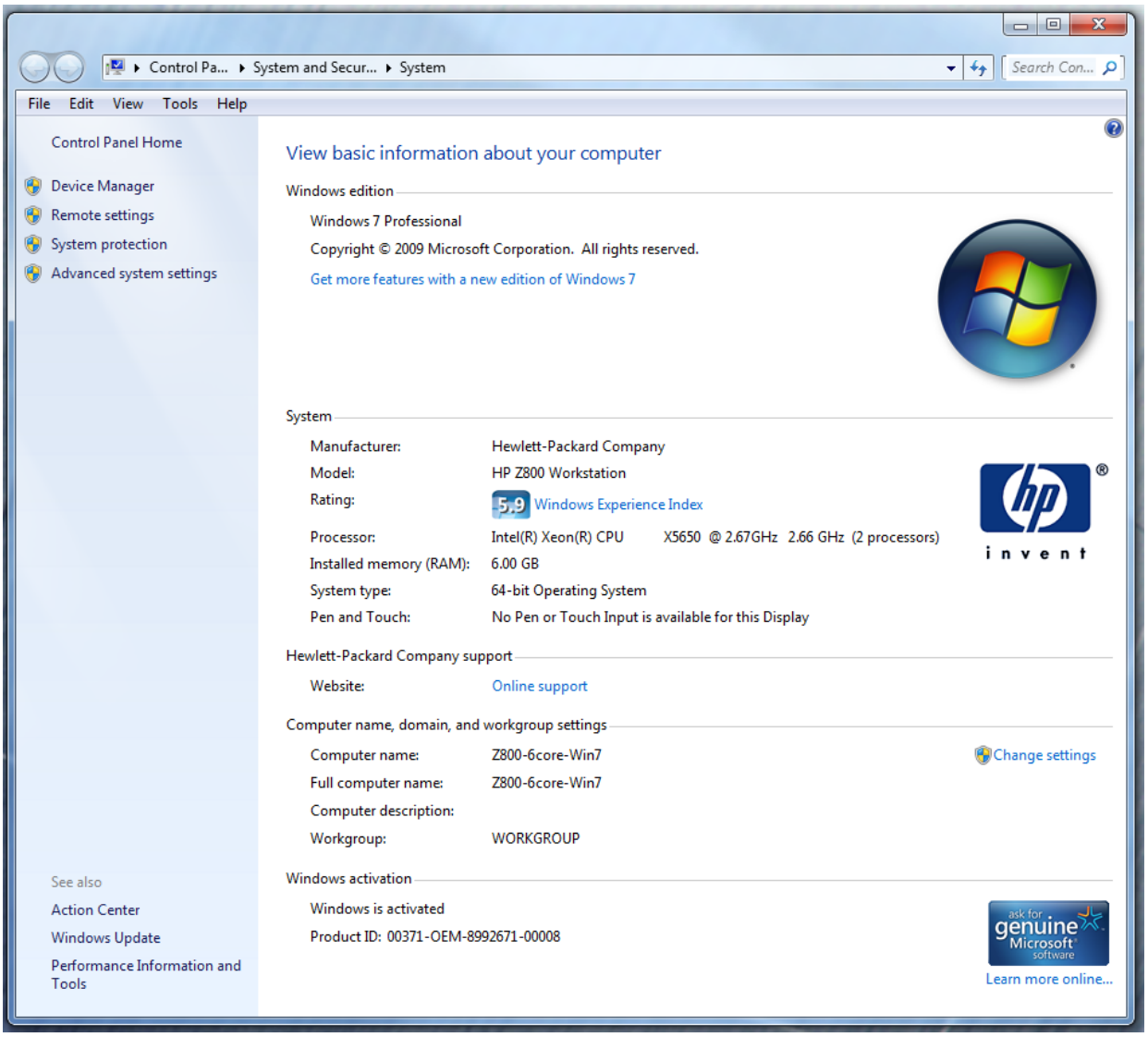
- Optimizations for Video Editors – Windows XP

  http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=390331

I.) Set Windows “Visual Effects” for “best performance”:

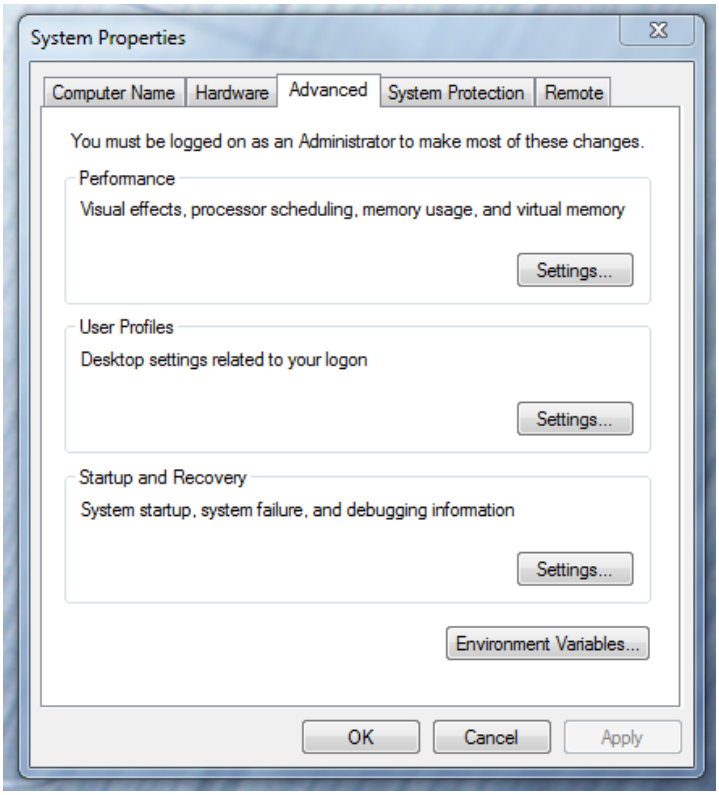
(Please Note: Windows 7 screen shots shown for reference. WinXP and Vista screens will vary).

1. Right-Click on My Computer / Computer
2. Select Properties
3. The screen below will be displayed:

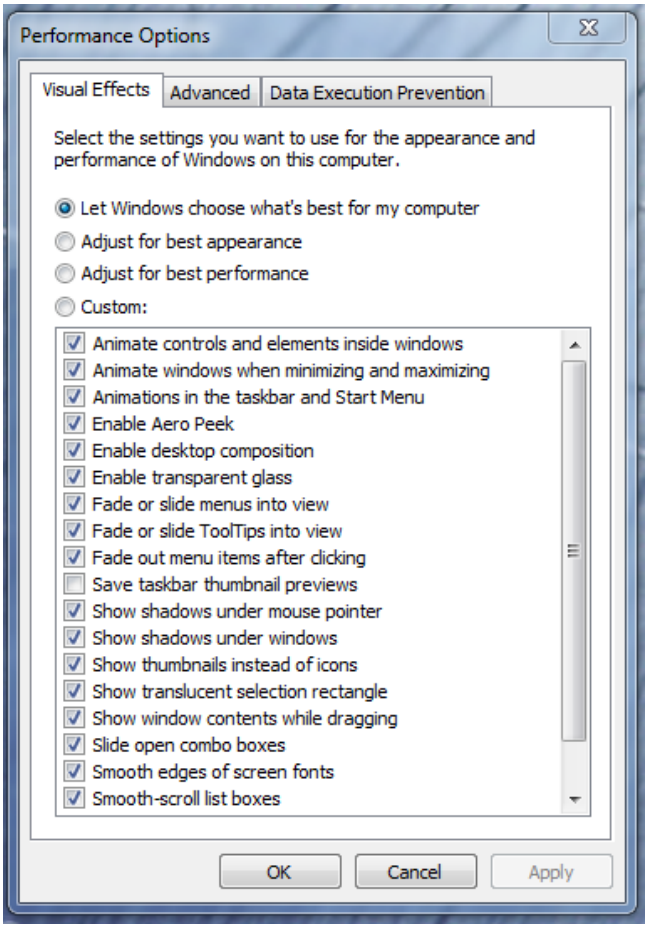

Control Pa... ▸ System and Secur... ▸ System
Search Con...
File Edit View Tools Help
Control Panel Home
Device Manager
Remote settings
System protection
Advanced system settings
View basic information about your computer
Windows edition
Windows 7 Professional
Copyright © 2009 Microsoft Corporation. All rights reserved.
Get more features with a new edition of Windows 7
System
Manufacturer: Hewlett-Packard Company
Model: HP Z800 Workstation
Rating: 5.9 Windows Experience Index
Processor: Intel(R) Xeon(R) CPU X5650 @ 2.67GHz 2.66 GHz (2 processors)
Installed memory (RAM): 6.00 GB
System type: 64-bit Operating System
Pen and Touch: No Pen or Touch Input is available for this Display
invent
Hewlett-Packard Company support
Website: Online support
Computer name, domain, and workgroup settings
Computer name: Z800-6core-Win7
Full computer name: Z800-6core-Win7
Computer description:
Workgroup: WORKGROUP
Change settings
Windows activation
Windows is activated
Product ID: 00371-OEM-8992671-00008
ask for genuine Microsoft software
Learn more online...
See also
Action Center
Windows Update
Performance Information and Tools

4. On the left side of the screen above, locate and select “Advanced system settings”

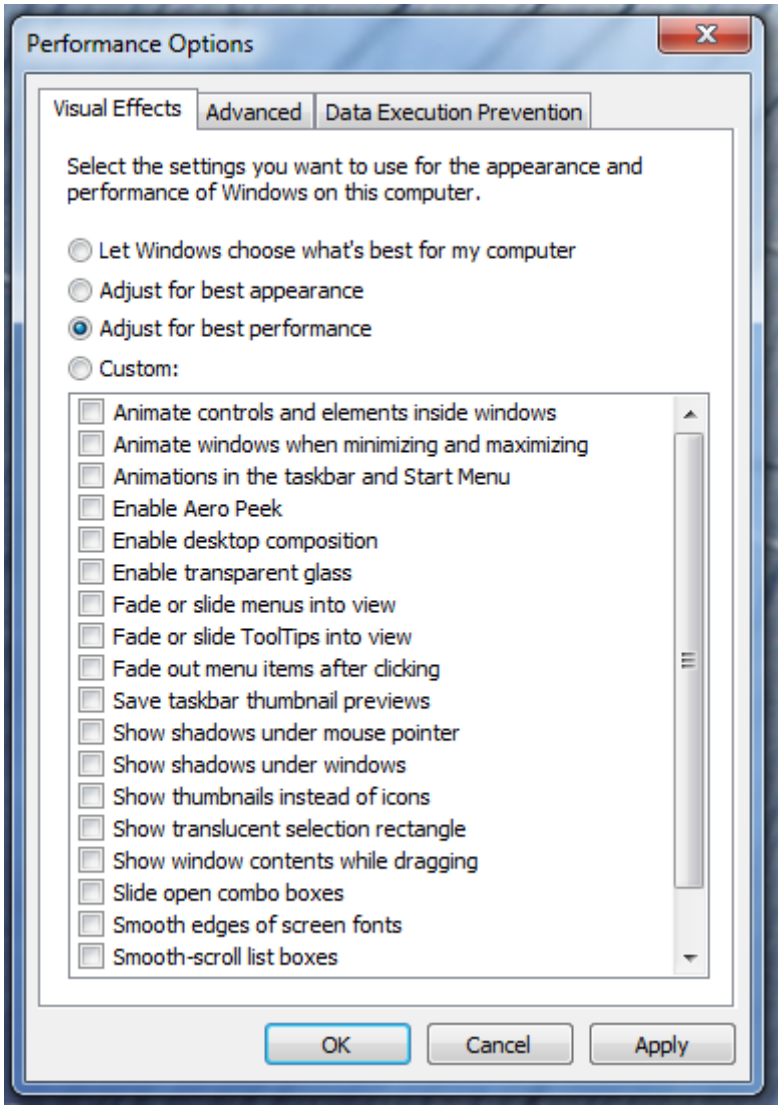
5. The System properties window will be displayed. (Picture below).



6. Under the “Advanced” tab depress the “Settings...” button for performance.
7. The “performance Options” window will be displayed. (Picture below).


Performance Options
Visual Effects
Advanced
Data Execution Prevention
Select the settings you want to use for the appearance and performance of Windows on this computer.
Let Windows choose what's best for my computer
Adjust for best appearance
Adjust for best performance
Custom:
Animate controls and elements inside windows
Animate windows when minimizing and maximizing
Animations in the taskbar and Start Menu
Enable Aero Peek
Enable desktop composition
Enable transparent glass
Fade or slide menus into view
Fade or slide ToolTips into view
Fade out menu items after clicking
Save taskbar thumbnail previews
Show shadows under mouse pointer
Show shadows under windows
Show thumbnails instead of icons
Show translucent selection rectangle
Show window contents while dragging
Slide open combo boxes
Smooth edges of screen fonts
Smooth-scroll list boxes
OK
Cancel
Apply

8. Under the “Visual Effects” tab select the “Adjust for best performance” selection. (Picture below).


Performance Options
Visual Effects
Advanced
Data Execution Prevention
Select the settings you want to use for the appearance and performance of Windows on this computer.
Let Windows choose what's best for my computer
Adjust for best appearance
Adjust for best performance
Custom:
Animate controls and elements inside windows
Animate windows when minimizing and maximizing
Animations in the taskbar and Start Menu
Enable Aero Peek
Enable desktop composition
Enable transparent glass
Fade or slide menus into view
Fade or slide ToolTips into view
Fade out menu items after clicking
Save taskbar thumbnail previews
Show shadows under mouse pointer
Show shadows under windows
Show thumbnails instead of icons
Show translucent selection rectangle
Show window contents while dragging
Slide open combo boxes
Smooth edges of screen fonts
Smooth-scroll list boxes
OK
Cancel
Apply

9. Depress the “Apply” button
10. Reboot Windows
11. Required Windows visual performance settings for Avid environments are now complete.

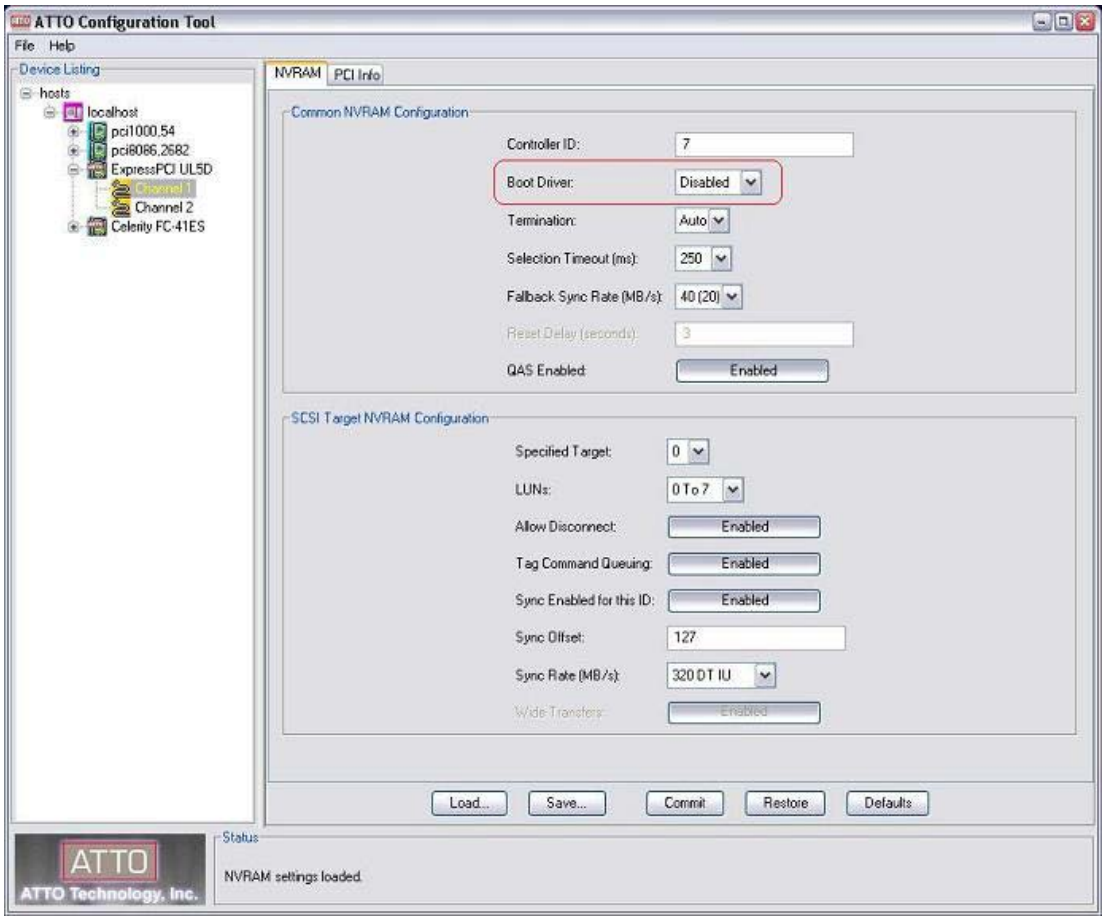
J.) **ATTO UL5D issue:** When an ATTO UL5D PCI-E u320 SCSI controller is installed in slot #5, the UL5D BIOS must be disabled or the following warning may be reported during system boot: (Also the UL5D BIOS must be disabled for proper operation when connected to an AVID VideoRAID RTR u320 SCSI).

110 – Out of memory space for option ROMS.
The option ROM for the following device was unable to run due to memory constraints. If you choose to continue, one or more PCI devices may not work properly

To disable the UL5D BIOS and eliminate the above warning, perform one of the following:

A. AVID Knowledge Base article 273945,
http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=273945&Hilite=UL5D

Install Atto UL5D configuration tool and launch the software.
Expand the Express PCI UL5D menu, and click on Channel.
The Boot Driver has to be disabled on both channels of the UL5D.
Configure the UL5D per this screenshot, and do this for both Channel 1 and Channel 2



B. Or during system boot perform the following:

1. Reboot the system
2. Hit "Escape" to clear the HP splash screen
3. Hit Ctrl-Z when the following Atto UL5D BIOS message prompts
   ```
   ************************************************
   ** ATTO ExpressPCI ™ Version 2.10 **
   ***** Press [Ctrl + Z] for Setup Utility *****
   ```
4. Select 1 - Adapter menu
5. Select 2 - Configure Both Adapter Channels
6. For ver 2.10 firmware
   - Select Host Adapter BIOS
   - Select "Disabled" using [Page Up] / [Page Down]
7. For ver 2.27 firmware
   - Select Boot Driver
   - Select "Disabled" using [Page Up] / [Page Down]
8. Press "ESC"
9. Press "ESC"
10. Select 4 – Save Parameters and Exit

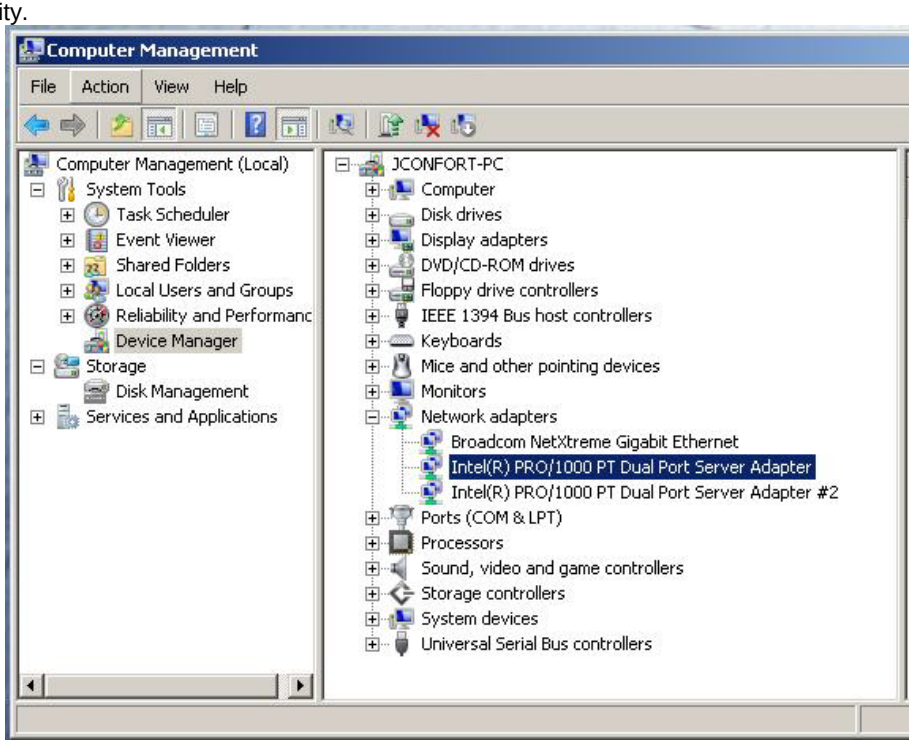
K.) **<u>Intel PRO 1000 PT for ISIS connectivity:</u>** For proper operation and connectivity of the Intel PRO 1000 PT with ISIS the following are required:

1. For the Intel PRO 1000 PT driver, under the performance settings, change the following parameters:
   - Receive Buffers to 1024
   - Transmit Buffers to 1024

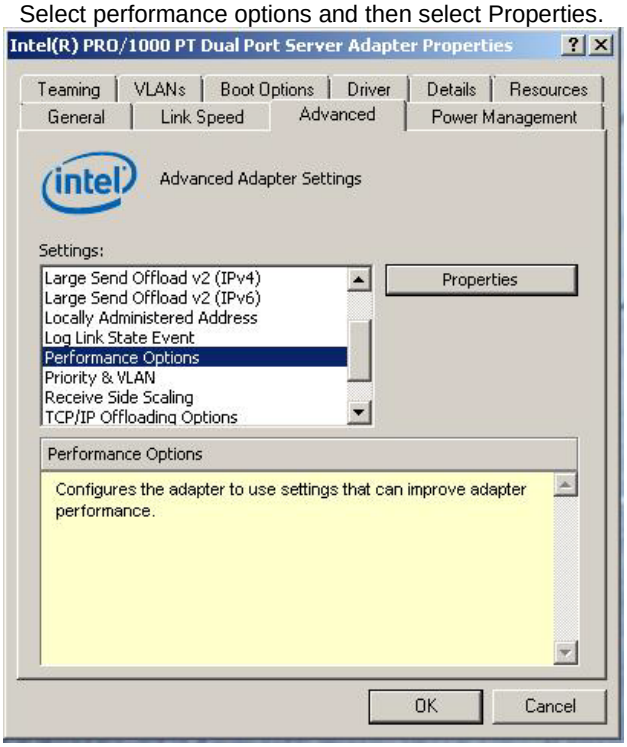
2. Disable the windows firewall.

Intel PRO 1000 PT Driver: The proper driver can be found in the ISIS software directory: Tools_3rdParty / Drivers_and_Firmware

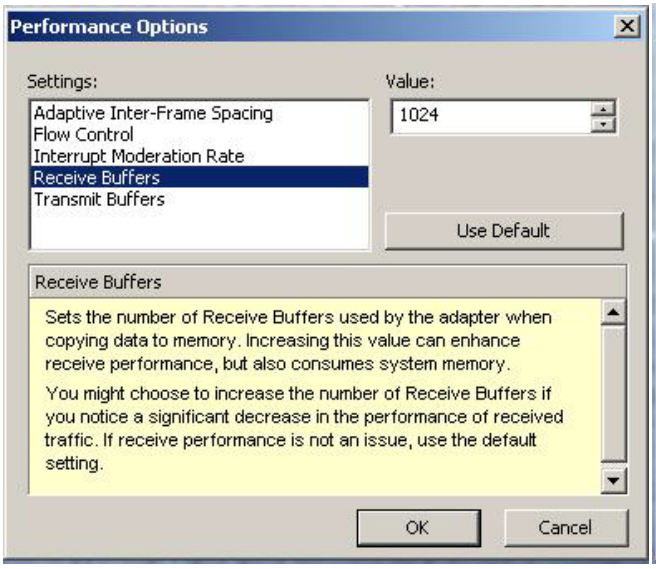
<u>To set the Intel PRO 1000 PT Receive / Transmit buffers:</u>
Go to device manager and select each instance of the device named Intel(R) PRO/1000 PT Dual Port Server Adapter which will be used for ISIS connectivity.



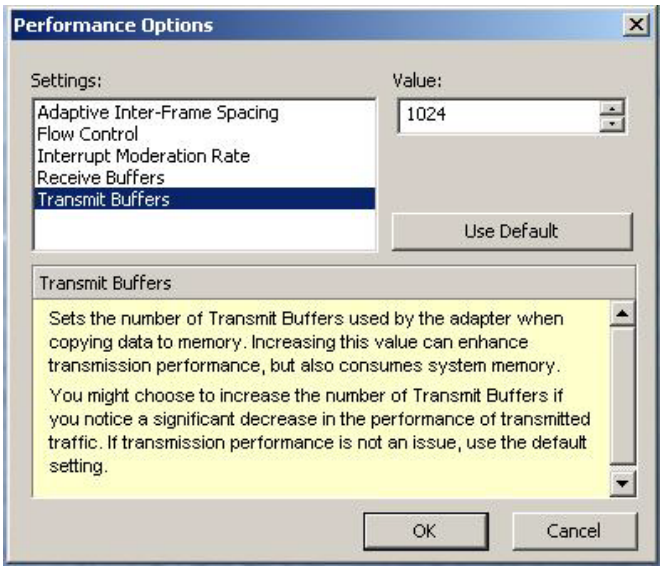
Select performance options and then select Properties.



Set Receive Buffers to 1024

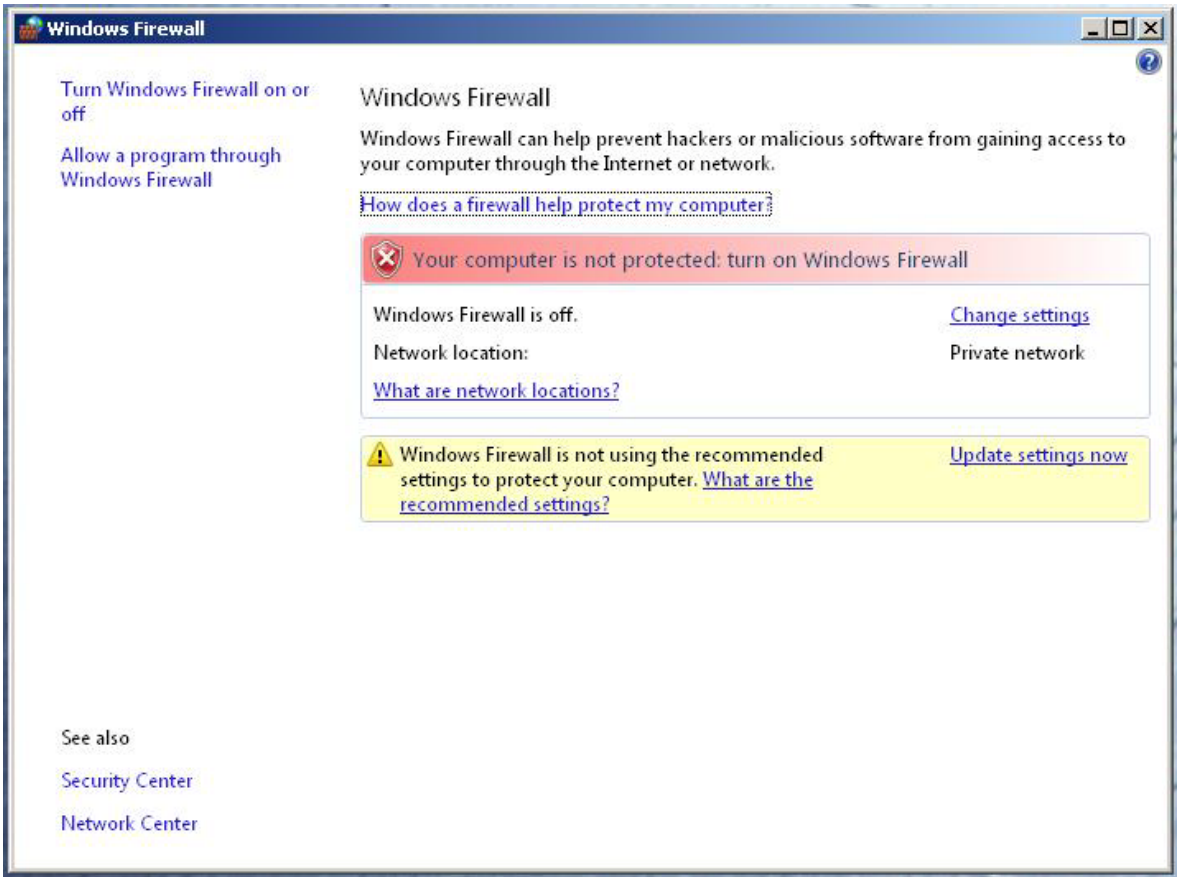

Performance Options
Settings:
Value:
Adaptive Inter-Frame Spacing
Flow Control
Interrupt Moderation Rate
Receive Buffers
Transmit Buffers
1024
Use Default
Receive Buffers
Sets the number of Receive Buffers used by the adapter when copying data to memory. Increasing this value can enhance receive performance, but also consumes system memory.
You might choose to increase the number of Receive Buffers if you notice a significant decrease in the performance of received traffic. If receive performance is not an issue, use the default setting.
OK
Cancel

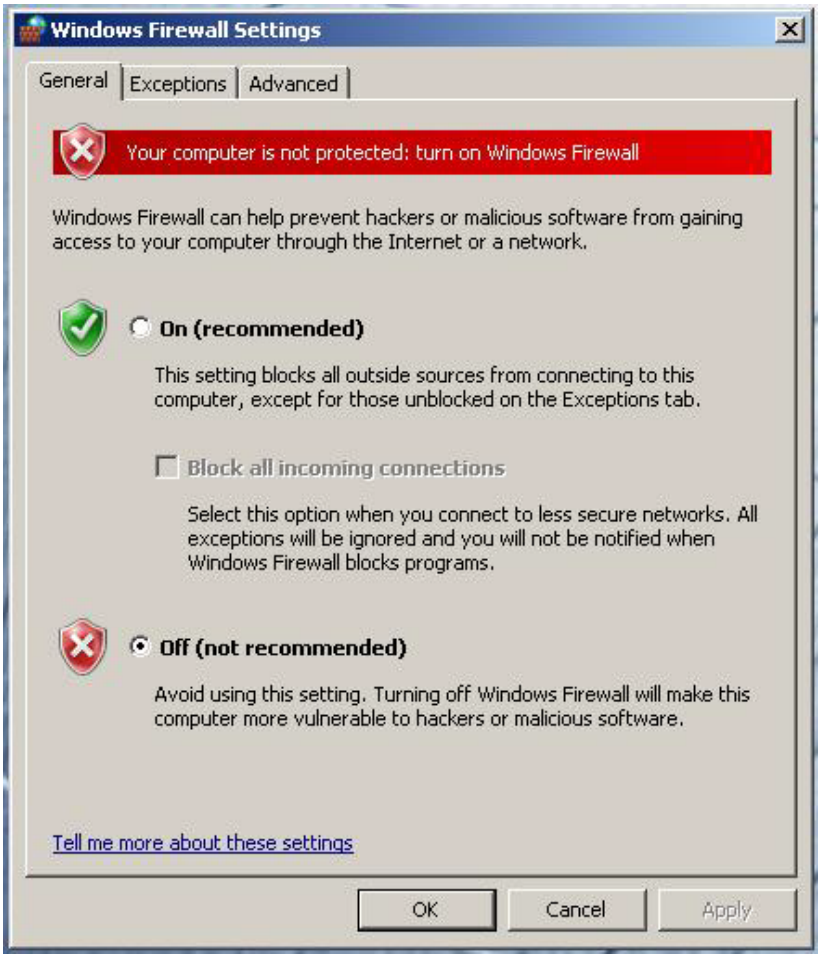
Set Transmit Buffers to 1024


Performance Options
Settings:
Value:
Adaptive Inter-Frame Spacing
Flow Control
Interrupt Moderation Rate
Receive Buffers
Transmit Buffers
1024
Use Default
Transmit Buffers
Sets the number of Transmit Buffers used by the adapter when copying data to memory. Increasing this value can enhance transmission performance, but also consumes system memory.
You might choose to increase the number of Transmit Buffers if you notice a significant decrease in the performance of transmitted traffic. If transmission performance is not an issue, use the default setting.
OK
Cancel

Perform this for each instance of the device named “Intel(R) PRO/1000 PT Dual Port Server Adapter” which will be used for ISIS connectivity.

Disable the windows firewall:


Windows Firewall
Turn Windows Firewall on or off
Allow a program through Windows Firewall
Windows Firewall
Windows Firewall can help prevent hackers or malicious software from gaining access to your computer through the Internet or network.
How does a firewall help protect my computer?
Your computer is not protected: turn on Windows Firewall
Windows Firewall is off.
Change settings
Network location:
Private network
What are network locations?
Windows Firewall is not using the recommended settings to protect your computer. What are the recommended settings?
Update settings now
See also
Security Center
Network Center


Windows Firewall Settings
General
Exceptions
Advanced
Your computer is not protected: turn on Windows Firewall
Windows Firewall can help prevent hackers or malicious software from gaining access to your computer through the Internet or a network.
On (recommended)
This setting blocks all outside sources from connecting to this computer, except for those unblocked on the Exceptions tab.
Block all incoming connections
Select this option when you connect to less secure networks. All exceptions will be ignored and you will not be notified when Windows Firewall blocks programs.
Off (not recommended)
Avoid using this setting. Turning off Windows Firewall will make this computer more vulnerable to hackers or malicious software.
Tell me more about these settings
OK
Cancel
Apply

Revision Update

Revision	Date	Name	Update
A	March 5th, 2010	Joe Conforti	Initial Public Release of the Z400 Gen2 (6-DIMM / Embedded 1394a Firewire) Avid config guide
A1	March 25th, 2010	Joe Conforti	Added support for Intel® Quad-Core Xeon® W3540 Processor @ 2.93GHz 8MB cache
B	May 20th, 2010	Joe Conforti	Details for Media Composer 5.0 / NewsCutter 9.0 releases etc including info for Win7 support, Matrox MX02 Mini and Myricom 10GB (ISIS 2.2) support
B1	May 21st 2010	Joe Conforti	Corrected Win7 NewsCutter ver to 9.0
C	July 21st 2010	Joe Conforti	Added support for 3.33GHz 6–core CPU
D	Feb 17th 2011	Joe Conforti	Added support for: Media Composer 5.5, Symphony 5.5, NewsCutter 9.5, AJA IO Express, new DX Interface HBA, LSI 9200-8e SAS controller, AIC Xtore storage, new Nvidia driver (and specified optimized Nvidia driver settings). Clarifications: Win7 Legacy Driver use for 1394 DNA products, O.S. utilization for Chelsio S310E-SR 10Gb HBA, O.S. utilization for Myricom 10G-PCIE-8B-S 10Gb HBA, Set Windows “Visual Effects” for best performance. Added O.S. setting recommendations for optimum performance with Avid Editing applications. Also, general updates and clarifications.
E	March 4th 2011	Joe Conforti	Added support for Quadro 2000
F	March 24th 2011	Joe Conforti	Added support for Xtore StudioRAID 5Ti and simplified chart on page 6

G	May 18th, 2011	Joe Conforti	Added optional system BIOS change: Disable Intel Turbo Boost Technology– Only required if connecting USB audio I/O devices. This setting will eliminate any audio "motor-boating" or audio "popping" which may be experienced with USB audio I/O devices. Added Win7 SP1 formal support starting with M/C 5.5.2, Symphony 5.5.2, NewsCutter 9.5.2 releases BIOS 3.19 qualified